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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,733	12/19/2000	Doug Billings	067270001088-USO	4191
7278	7590	10/01/2009		
DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER DESAI, RACHNA SINGH	
			ART UNIT 2176	PAPER NUMBER
			MAIL DATE 10/01/2009	DELIVERY MODE PAPER

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DOUG BILLINGS, AVIAD ZLOTNICK,  
and SERGEY KRUTYOLKIN

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Appeal 2009-001168  
Application 09/740,733<sup>1</sup>  
Technology Center 2100

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Decided: October 1, 2009

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Before JEAN R. HOMERE, THU A. DANG, and CAROLYN D.  
THOMAS, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 through 30. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

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<sup>1</sup> Filed on December 19, 2000. The real party in interest is International Business Machines Corp.

*Brief Summary of the Invention*

Appellants invented a method, apparatus, and computer-readable medium for extracting information filled into form documents. (Spec. 1, ll. 4-5.) Appellants' Figure 1 depicts a system (20) that processes a received document (22) to extract information therefrom. (Spec. 8, ll. 2-6.) The processor (30) uses rules that are stored in a memory (32) to label the fields in which the document resides. (Spec. 8, ll. 26-29.) After labeling the fields, the processor (30) extracts the contents (26) of each field (24) and arranges the contents appropriately in a database record (34). (Spec. 8, l. 29 through Spec. 9, l. 1.) The database record (34) identifies the content of each field by its corresponding label (36). (Spec. 9, ll. 1-2.) Therefore, according to Appellants, known rules can be used by a computer to automatically identify unknown fields in a document so as to eliminate or reduce the need for human involvement in field labeling. (Spec. 2, ll. 9-14.)

*Illustrative Claim*

Independent claim 1 further illustrates the invention as follows:

1. A method for processing a document that includes a plurality of fields having respective contents that have been filled into the fields, the method comprising:

providing labels to be assigned respectively to the fields and one or more rules applicable to the filled-in contents of the fields according to the labels assigned thereto;

machine reading the respective contents that have been filled into the fields;

machine assigning the labels to the fields by testing the contents of the fields against the rules in order to find an assignment of the labels to the fields that satisfies the rules; and

extracting and arranging the contents in a database record, in which the contents of the fields are identified by the assigned labels.

*Prior Art Relied Upon*

The Examiner relies on the following prior art as evidence of unpatentability:

Gupta	US 6,199,079 B1	Mar. 6, 2001 (filed Mar. 20, 1998)
Hetherington	US 2002/0010714 A1	Jan. 24, 2002 (filed Jul. 3, 2001)
Lee	US 6,535,883 B1	Mar. 18, 2003 (filed Aug. 4, 1999)
Rawat	US 6,662,340 B2 (filed Apr. 28, 2002, which is a Continuation-in-Part of US 6,981,028 filed Apr. 28, 2000)	Dec. 9, 2003

*Rejections on Appeal*

The Examiner rejects the claims on appeal as follows:

Claims 1 through 3, 6 through 10, 13 through 15, 18 through 22, and 25 through 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Rawat and Lee.

Claims 4, 5, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Rawat, Lee, and Hetherington.

Claims 11, 12, 23, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Rawat, Lee, and Gupta.

*Appellants' Contentions*

1. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders independent claims 1, 13, and 25 unpatentable. In particular, Appellants argue that:

(a) Rawat's disclosure of labeling unlabeled fields based on content, visual cues, and underlying markup code, in conjunction with Lee's disclosure of applying the appropriate rule to validate the content of known field names, does not teach assigning the labels to the fields by testing the contents of the fields against the rules in order to find an assignment of the labels to the fields that satisfies the rules. (App. Br. 8-9; Reply Br. 2.)

(b) There is insufficient rationale for the proffered combination. (App. Br. 9; Reply Br. 2-3.)

2. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders independent claims 26, 28, and 29 unpatentable. In particular, Appellants argue that:

(a) U.S. Patent No. 6,981,028's (hereinafter '028) disclosure of mapping forms to determine their structure and respective fields does not support Rawat's disclosure of sequentially associating fields within a form

and, therefore, makes Rawat ineffective as prior art against the claimed invention. (App. Br. 10-11; Reply Br. 3.)

(b) Rawat's disclosure of sequentially associating fields within a form does not teach geometrical rules indicating an expected geometrical relationship between two or more of the filled-in fields in the form according to the labels assigned to the fields, as recited in independent claims 26, 28, and 29. (App. Br. 10; Reply Br. 3.)

3. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 3 and 15 unpatentable. In particular, Appellants argue that Rawat's disclosure of sequentially associating fields within a form does not teach a relation between the contents of two or more fields. (App. Br. 11-12; Reply Br. 4.)

4. Appellants contend that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 4 and 16 unpatentable. In particular, Appellants argue that Hetherington's disclosure of determining semantic and syntactic attributes of data does not teach a mathematical relationship between the numbers contained in two or more of the fields. (App. Br. 12-13; Reply Br. 5.)

5. Appellants contend that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 5 and 17 unpatentable. In particular, Appellants argue that Hetherington's disclosure of determining semantic and syntactic attributes of data does not

teach a semantic relationship between words formed by characters. (App. Br. 13.)

6. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 6 and 8 unpatentable. In particular, Appellants argue that:

(a) U.S. Patent No. '028's disclosure of mapping forms to determine their structure and respective fields does not support Rawat's disclosure of sequentially associating fields within a form and, therefore, makes Rawat ineffective as prior art against the claimed invention. (App. Br. 14.)

(b) Rawat's disclosure of sequentially associating fields within a form does not teach one or more geometrical rules indicating an expected geometrical relationship between two or more of the fields. (App. Br. 14.)

7. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 7 and 19 unpatentable. In particular, Appellants argue that Rawat's disclosure of a dictionary that provides multiple label options does not teach making and rejecting test assignments. (App. Br. 14.)

8. Appellants contend that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 10 and 22 unpatentable. In particular, Appellants argue that Rawat's disclosure of a dictionary that provides multiple label options does not teach finding and comparing multiple candidate assignments. (App. Br. 15.)

9. Appellants contend that the Examiner erred in concluding that the combination of Rawat, Lee, and Gupta renders dependent claims 12 and 24 unpatentable. In particular, Appellants argue that Gupta's disclosure of automatically filling in on-line forms utilizing selectable criteria does not teach statistical criterion. (App. Br. 15-16.)

*Examiner's Findings and Conclusions*

1. The Examiner concludes that combination of Rawat and Lee renders independent claims 1, 13, and 25 unpatentable. In particular, the Examiner finds that:

(a) Rawat's disclosure of labeling unlabeled fields based on content, in conjunction with Lee's disclosure of a validation rule that tests the content of each field to ensure it is filled out correctly, teaches assigning the labels to the fields by testing the contents of the fields against the rules in order to find an assignment of the labels to the fields that satisfies the rules. (Ans. 11-12.)

(b) There is sufficient rationale for the proffered combination. (App. 12-13.)

2. The Examiner concludes that combination of Rawat and Lee renders independent claims 26, 28, and 29 unpatentable. In particular, the Examiner finds that:

(a) Rawat is a CIP of U.S. Patent No. '028, and U.S. Patent No. '028's disclosure of assigning a dynamic field name by examining the



contents and structures of a document provides support for Rawat's disclosure of sequentially associating fields within a form. (Ans. 15-16.)

(b) Rawat's disclosure of a system that identifies the mapping of at least one field preceding a current field, and mapping the current field based on the mapping of the preceding field, teaches one or more geometrical rules indicating an expected geometrical relationship between two or more of the filled-in fields in the form. (Ans. 14-15.)

3. The Examiner concludes that the combination of Rawat and Lee renders dependent claims 3 and 15 unpatentable. In particular, the Examiner finds that U.S. Patent No. '028's disclosure of assigning a dynamic field name by examining the contents and structures of a document provides support for Rawat's disclosure of sequentially associating fields within a form and, therefore, teaches a relation between the contents of two or more fields. (Ans. 16-17.)

4. The Examiner concludes that the combination of Rawat, Lee, and Hetherington renders dependent claims 4 and 16 unpatentable. In particular, the Examiner finds that Hetherington's disclosure of examining both the content of the data elements and the contextual relationship to determine semantic and syntactic information teaches a mathematical relationship between the numbers contained in two or more of the fields. (Ans. 17.)

5. The Examiner concludes that the combination of Rawat, Lee, and Hetherington renders dependent claims 5 and 17 unpatentable. In

particular, the Examiner finds that Hetherington's disclosure of examining both the content of the data elements and the contextual relationship to determine semantic and syntactic information teaches a semantic relationship between words formed by characters. (Ans. 18.)

6. The Examiner concludes that the combination of Rawat and Lee renders dependent claims 6 and 18 unpatentable. In particular, the Examiner finds that U.S. Patent No. '028's disclosure of assigning a dynamic field name by examining the contents and structures of a document provides support for Rawat's disclosure of sequentially associating fields within a form. Further, Rawat's disclosure of sequentially associating fields within a form teaches one or more geometrical rules indicating an expected geometrical relationship between two or more of the fields. (Ans. 18-19.)

7. The Examiner concludes that the combination of Rawat and Lee renders dependent claims 7 and 19 unpatentable. In particular, the Examiner finds that Rawat's disclosure of analyzing the field's programmatic name by utilizing a dictionary that provides multiple label options teaches making and rejecting test assignments. (Ans. 19-20.)

8. The Examiner concludes that the combination of Rawat and Lee renders dependent claims 10 and 22 unpatentable. In particular, the Examiner finds that Rawat's disclosure of analyzing the field's programmatic name by utilizing a dictionary that provides multiple label options teaches finding and comparing multiple candidate assignments. (Ans. 20.)

9. The Examiner concludes that the combination of Rawat, Lee, and Gupta renders dependent claims 12 and 24 unpatentable. In particular, the Examiner finds that Gupta's disclosure of identifying and matching identifiers from a form to a plurality of pages teaches choosing an assignment that satisfies a statistical criterion with respect to the satisfaction of the applicable rules by the contents of the fields in a plurality of form documents. (Ans. 21.)

## II. ISSUES

1. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders independent claims 1, 13, and 25 unpatentable? In particular, the issue turns on whether:

(a) The proffered combination teaches assigning the labels to the fields by testing the contents of the fields against the rules in order to find an assignment of the labels to the fields that satisfies the rules, as recited in independent claims 1, 13, and 25?

(b) There is sufficient rationale for the proffered combination?

2. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders independent claims 26, 28, and 29 unpatentable? In particular, the issue turns on whether:

(a) U.S. Patent No. '028's disclosure provides proper support for sequentially associating fields within a form, as disclosed in Rawat?

(b) The proffered combination teaches one or more geometrical rules indicating an expected geometrical relationship between two or more of the filled-in fields in the form, as recited in independent claims 26, 28, and 29?

3. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 3 and 15 unpatentable? In particular, the issue turns on whether Rawat teaches a relation between the contents of two or more fields, as recited in dependent claims 3 and 15?

4. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 4 and 16 unpatentable? In particular, the issue turns on whether Hetherington teaches a mathematical relationship between the numbers contained in two or more of the fields, as recited in dependent claims 4 and 16?

5. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 5 and 17 unpatentable? In particular, the issue turns on whether Hetherington teaches a semantic relationship between words formed by characters, as recited in dependent claims 5 and 17?

6. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 6 and 18 unpatentable? In particular, the issue turns on whether:

(a) U.S. Patent No. '028's disclosure provides proper support for sequentially associating fields within a form, as disclosed in Rawat

(b) Rawat teaches providing one or more geometrical rules indicating an expected geometrical relationship between two or more fields according to the labels assigned thereto, and applying geometrical rules along with the rules applicable to the contents of the fields, as recited in dependent claims 6 and 18?

7. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 7 and 19 unpatentable? In particular, the issue turns on whether Rawat teaches making a test assignment of the labels to the fields, and rejecting the test assignment if the contents of the assigned fields do not satisfy the rules applicable according to the labels, as recited in dependent claims 7 and 19?

8. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 10 and 22 unpatentable? In particular, the issue turns on whether Rawat teaches finding a plurality of alternative candidate assignments for which the contents of the assigned fields satisfy all the applicable rules, and comparing the candidate assignments so as to unequivocally assign at least a subset of the labels to the respective fields, as recited in dependent claims 10 and 22?

9. Have Appellants shown that the Examiner erred in concluding that the combination of Rawat, Lee, and Gupta renders dependent claims 12 and 24 unpatentable? In particular, the issue turns on whether Gupta teaches

choosing the assignment so as to satisfy statistical criterion with respect to satisfaction of the applicable rules by the contents of the fields in at least a subset of the plurality of form documents, as recited in dependent claims 12 and 24?

### III. FINDINGS OF FACT

The following Findings of Fact are shown by a preponderance of the evidence.

#### *Appellants' Invention*

1. Geometrical rules are rules that relate to the position of the fields in the document or table under analysis. (Spec. 10, ll. 22-25.) An example of such a rule would be that the field to be labeled “ZIP code” must be located to the right of or below the “state” field. (Spec. 10, ll. 25-27.)

#### *Rawat*

2. Rawat's Figure 1 depicts form filling software that generally analyzes the fields (101) of the form and maps them to the correct user data by parsing the hypertext markup language (“HTML”) field names, commonly known as field tags and then supplying the correct user data from a stored user profile, generally located on a remote server. (Col. 4, ll. 31-36.) In particular, Rawat discloses an HTML form (100) that includes a plurality of visible labels (102), in which each label is spatially and visually related to its corresponding field, although no programmatic relationship usually exists between them, as with the HTML field tags. (Col. 4, ll. 43-

47.) The field labels are provided for the user's benefit to advise them of the correct information to enter into a particular field. (Col. 4, ll. 47-49.)

Further, Rawat discloses a client-based system and method for filling out electronic forms automatically, in which the fields of an HTML form are identified and mapped to the correct user data based on visible form elements such as field labels. (Col. 4, ll. 53-58.) Following mapping and identification, the fields of the form are populated with the correct user data, without reference to a previous stored mapping or analysis of the form, and without requiring user intervention. (Col. 4, ll. 58-62.)

3. Rawat's Figure 3 depicts that after the visible elements of the form have been completely mapped, the correct user data is retrieved from a stored user profile (302), a data file stored on the client, and concatenated, truncated or re-formatted as required by the display format, and the form fields are populated with the data. (Col. 5, ll. 45-50.)

4. Rawat discloses that if a field lacks a label, the algorithm may analyze the field's programmatic name. (Col. 7, ll. 19-20.) Following field name analysis, the field name is compared to the entries in a Field label dictionary and a match is found. (Col. 7, ll. 20-22.) The field is then mapped accordingly. (Col. 7, ll. 22-23.)

5. Rawat discloses a method further comprising the steps of:

(a) when a field lacks a visible field label, associating the field according to context. (Col. 10, ll. 45-47.)

(b) identifying mapping of at least one field preceding a current field in the first sequence; and mapping the current field based on the mapping of said preceding field. (Col. 10, ll. 48-54.)

*'028 Patent*

6. '028 Patent discloses that the mapping process enables the system to recognize a previously mapped form upon subsequent encounters there-with; recognition of a particular form's fields and structure, in turn, enables the program code at the server to input the correct user data into each field, in the proper format, efficiently and systematically. (Col. 12, ll. 24-29.) Accordingly, mapping a form may involve all of the following: examining the underlying HTML code for the purpose of analyzing the form's structure and arrangement; identifying the required fields, the optional fields, and the requested format of each; matching the form fields with the user data fields in the database to which they correspond; and recording all of the foregoing information under a unique identifier string through which the system may prospectively identify that particular form. (Col. 12, ll. 29-37.)

*Lee*

7. Lee discloses a graphical user interface for creating validation rules which confirm the validity of data collected by application software used in mobile workforce management. (Col. 1, ll. 9-12.) In particular, Lee



discloses that the validation rules test the contents of each field entered by the user to ensure that the field is filled out correctly, either after the worker enters data into a field, or after the form is transmitted back to a centralized server computer. (Col. 2, ll. 33-36.)

*Hetherington*

8. Hetherington generally relates to the processing, storage, and analysis of information in the form of free-format data and, in particular, a method and apparatus for interpreting free-format text. (Pg. 1, Para. [0001].) In particular, Hetherington discloses examining the elements of the data to determine attributes of the data, by examining the content of the elements and the contextual relationships of elements to each other, to determine semantic and syntactic information (attributes) about the data. (Pg. 1, claim 1.)

*Gupta*

9. Gupta generally relates to automatically filling in and submitting forms presented by vendor sites in order to effect commercial transactions on the web. (Col. 1, ll. 59-62.) In particular, Gupta discloses a method of automatically filling in on-line forms presented by web pages in an internet transactional environment by determining based upon selectable criteria a form identifier corresponding to a particular on-line form, and thereupon, for each form so identified, identifying one or many

corresponding match patterns with a page containing a target on-line form is parsed to obtain a plurality of attributes. (Abstract.)

#### IV. PRINCIPLES OF LAW

##### Written Description

To satisfy the written description requirement, the disclosure must convey with reasonable clarity to skilled artisans that Appellants were in possession of the claimed invention as of the filing date. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

For prior art purposes, a U.S. patent or patent application publication that claims the benefit of an earlier filing date under 35 U.S.C. 120 of a prior nonprovisional application would be accorded the earlier filing date as its prior art date under 35 U.S.C. 102 (e), provided the earlier-filed application properly supports the subject matter relied upon in any rejection in compliance with 35 U.S.C. 112, first paragraph.

MPEP § 2136.03(IV). *See also Ex parte Yamaguchi*, 88 USPQ2d 1606 (BPAI 2008) (precedential), available at <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd074412.pdf>.

##### *Obviousness*

“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.” *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998).

Section 103 forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," and discussed circumstances in which a patent might be determined to be obvious. *Id.* at 415 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* at 416. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

In identifying a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art teachings, the Examiner must show some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

## V. ANALYSIS

### *Claims 1, 13, and 25*

Independent claims 1, 13, and 25 recite, in relevant part, assigning the labels to the fields by testing the contents of the fields against the rules in order to find an assignment of the labels to the fields that satisfies the rules. As detailed in the Findings of Fact section above, Rawat discloses a software that analyzes the fields of a form and automatically maps them to the correct user data by parsing the field names and supplying the correct user data from a stored user profile. (FF 2, 3.) In particular, Rawat discloses that field labels are provided for the user's benefit to advise them of the correct information to enter into a particular field. (*Id.*) We find that Rawat's disclosure teaches identifying and associating user profile information according to field labels. In particular, we find that an ordinarily skilled artisan would appreciate that Rawat's disclosure of a user profile indicates that the different categories of information stored in a user's profile are classified into different fields. In summary, we find that Rawat's disclosure of classifying profile information into different fields and associating each field according to respective field labels teaches assigning labels to fields by testing the contents of the fields against rules in order to find an assignment of the labels to the fields that satisfy the rules, as recited in independent claims 1, 13, and 25.

As set forth above, we find that Rawat discloses classifying profile information into different fields and associating each field according to

respective field labels. Further, Lee's disclosure complements Rawat by teaching validation rules that confirm the validity of data collected by application software. (FF 7.) We find that Rawat and Lee disclose prior art elements that perform their ordinary functions to predictably result in a method, apparatus, and computer-readable medium for extracting information in a form document utilizing rules that label the fields of the form document. *See KSR*, U.S. at 418-419. It follows that Appellants have failed to show that the Examiner erred in concluding the combination of Rawat and Lee renders independent claims 1, 13, and 25 unpatentable.

Additionally, as discussed above, we find that Rawat's disclosure teaches assigning labels to fields by testing the contents of the fields against rules in order to find an assignment of the labels to the fields that satisfy the rules. Further, we find Rawat's disclosure of associating each field according to respective field labels also teaches providing labels and applicable rules, reading content, extracting content, and arranging the content accordingly. Thus, alternatively, Rawat renders independent claims 1, 13, and 25 unpatentable.

*Claims 2, 8, 9, 11, 14, 20, 21, 23, and 30*

Appellants do not provide separate arguments with respect to dependent claims 2, 8, 9, 11, 14, 20, 21, 23, and 30. Therefore, we select claims 1, 13, and 25 as being representative of the cited claims. Consequently, Appellants have not shown error in the Examiner's rejection

of dependent claims 2, 8, 9, 11, 14, 20, 21, 23, and 30 for the reasons set forth in our discussion of independent claims 1, 13, and 25 above. 37 C.F.R. § 41.37(c)(1)(vii).

*Claims 26 through 29*

Appellants contend that the subject matter relied upon in Rawat is not supported by U.S. Patent No. '028. (App. Br. 10-11.) However, a mere conclusory statement that is totally devoid of explanation or analysis hardly persuades us of error in the Examiner's factual findings pertaining to Rawat and its prior non-provisional application. Nonetheless, we note that the Examiner has provided relevant factual correspondence between Rawat and U.S. Patent No. '028. As detailed in the Findings of Fact section above, Rawat discloses sequentially associating fields within a form. (FF 5a-5b.) U.S. Patent No. '028 discloses processing a form by identifying the required fields. (FF 6.) An ordinarily skilled artisan would immediately discern from the cited portions of U.S. Patent No. '028 that there is proper support for sequentially associating fields within a form. We therefore agree with the Examiner that an ordinarily skilled artisan would have been able to discern that U.S. Patent No. '028 contains proper support for sequentially associating fields within a form, as disclosed in Rawat. (Ans. 15-16.)

Independent claims 26, 28, and 29 recite, in relevant part, one or more geometrical rules indicating an expected geometrical relationship between two or more of the filled-in fields in the form document. As set forth in

Appellants' Specification, geometrical rules are rules that relate to the position of the fields within a document. (FF 1.) As set forth above, we find that Rawat discloses classifying profile information into different fields and associating each field according to respective field labels. Further, Rawat discloses sequentially associating each field. (FF 5a-5b.) We find that Rawat's disclosure, at best, teaches classifying profile information into different fields and sequentially associating each field according to respective field labels. However, Rawat falls short of teaching or suggesting one or more geometrical rules that relate to the position of the fields within a document. While Lee discloses validation rules that confirm the validity of data collected by application software, it is, however, silent on utilizing one or more geometrical rules that relate to the position of the fields within a document. It follows that Appellants have shown that the Examiner erred in concluding that the combination of Rawat and Lee renders independent claims 26, 28, and 29 unpatentable.

Because dependent claim 27 also incorporates the limitation discussed above, we find that Appellants have also shown error in the Examiner's rejection of this claim for the reasons set forth in our discussion of independent claims 26, 28, and 29.

#### *Claims 3 and 15*

Claims 3 and 15 recite, in relevant part, a relation between the contents of two or more fields. As set forth above, we find that Rawat's

disclosure teaches classifying profile information into different fields and sequentially associating each field according to respective field labels. In particular, we find that Rawat's disclosure of sequentially associating each field according to respective field labels amounts to a relation between the contents of two or more fields, as recited in dependent claims 3 and 15. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 3 and 15 unpatentable.

#### *Claims 4 and 16*

Claims 4 and 16 recite, in relevant part, a mathematical relationship between the numbers contained in the two or more of the fields. As detailed in the Findings of Fact section above, Hetherington discloses examining the elements of the data to determine semantic and syntactic attributes. (FF 8.) We find that Hetherington's disclosure teaches examining fields to determine semantic and syntactic properties. In particular, we find that an ordinarily skilled artisan would appreciate that Hetherington's disclosure of examining fields to determine syntactic properties amounts to a mathematical relationship between the numbers contained in the two or more of the fields, as recited in dependent claims 4 and 16. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 4 and 16 unpatentable.



*Claims 5 and 17*

Claims 5 and 17 recite, in relevant part, a semantic relationship between words formed by characters. As set forth above, we find that Hetherington's disclosure teaches examining fields to determine semantic and syntactic properties. In particular, we find that an ordinarily skilled artisan would appreciate that Hetherington's disclosure of examining fields to determine semantic properties amounts to a semantic relationship between words formed by characters, as recited in dependent claims 5 and 17. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat, Lee, and Hetherington renders dependent claims 5 and 17 unpatentable.

*Claims 6 and 18*

Claims 6 and 18 recite, in relevant part, providing one or more geometrical rules indicating an expected geometrical relationship between two or more fields and applying geometrical rules along with the rules applicable to the contents of the fields. As set forth above in our discussion of independent claims 26, 28, and 29, we find that both Rawat and Lee fall short of teaching or suggesting one or more geometrical rules that relate to the position of the fields within a document. It follows that Appellants have shown that the Examiner erred in concluding that the combination of Rawat and Lee render dependent claims 6 and 18 unpatentable.

*Claims 7 and 19*

Claims 7 and 19 recite, in relevant part, making a test assignment of the labels to the fields and rejecting the test assignment if the contents of the assigned fields do not satisfy the rules applicable according to the labels. As set forth above, we find that Rawat's disclosure teaches classifying profile information into different fields and associating each field according to respective field labels. In particular, we find that an ordinarily skilled artisan would appreciate that associating each field according to respective field labels amounts to making a test assignment of the labels to the fields and rejecting the test assignment if the contents of the assigned fields do not satisfy the rules applicable according to the labels, as recited in dependent claims 7 and 19. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 7 and 19 unpatentable.

*Claims 10 and 22*

Claims 10 and 22 recite, in relevant part, finding a plurality of alternative candidate assignments for which the contents of the assigned fields satisfy all the applicable rules and comparing the candidate assignments. As detailed in the Findings of Fact section above, Rawat discloses that a field's name may be analyzed and compared to the entries in a field label dictionary. (FF 4.) Once a match is found, the field is mapped accordingly. (*Id.*) We find that Rawat's disclosure teaches analyzing and

comparing each field to multiple label options in a dictionary. In particular, we find that Rawat's disclosure of analyzing and comparing each field to multiple label options in a dictionary teaches finding a plurality of alternative candidate assignments for which the contents of the assigned fields satisfy all the applicable rules and comparing the candidate assignments, as recited in dependent claims 10 and 22. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 10 and 22 unpatentable.

#### *Claims 12 and 24*

Claims 12 and 24 recite, in relevant part, choosing the assignment so as to satisfy statistical criterion with respect to satisfaction of the applicable rules by the contents of the fields in at least a subset of the plurality of form documents. Gupta discloses utilizing selectable criteria to identify a corresponding form containing a plurality of attributes. (FF 9.) We find that Gupta's disclosure teaches utilizing selectable criteria to query a document containing fields with specific properties. As set forth above, we find that Rawat's disclosure teaches classifying profile information into different fields and associating each field according to respective field labels. In summary, we find that Gupta's disclosure of utilizing selectable criteria to query a document containing fields with specific properties, in conjunction with Rawat's disclosure of classifying profile information into different

fields and associating each field according to respective field labels, teaches choosing the assignment so as to satisfy statistical criterion with respect to satisfaction of the applicable rules by the contents of the fields in at least a subset of the plurality of form documents, as recited in dependent claims 12 and 24. It follows that Appellants have failed to show that the Examiner erred in concluding that the combination of Rawat and Lee renders dependent claims 12 and 24 unpatentable.

## VI. CONCLUSIONS OF LAW

Appellants have not shown that the Examiner erred in concluding that:

1. the combination of Rawat and Lee renders claims 1 through 3, 7 through 10, 13 through 15, 19 through 22, 25, and 30 unpatentable under 35 U.S.C. § 103(a).
2. the combination of Rawat, Lee, and Hetherington renders claims 4, 5, 16, and 17 unpatentable under 35 U.S.C. § 103(a).
3. the combination of Rawat, Lee, and Gupta renders claims 11, 12, 23, and 24 unpatentable under 35 U.S.C. § 103(a).

Appellants have shown that the Examiner erred in concluding that:

4. the combination of Rawat and Lee renders claims 6, 18, and 26 through 29 unpatentable under 35 U.S.C. § 103(a).

#### VII. DECISION

We affirm the Examiner's decision to reject claims 1 through 5, 7 through 17, 19 through 25, and 30 as being unpatentable under 35 U.S.C. § 103(a). However, we reverse the Examiner's decision to reject claims 6, 18, and 26 through 29 as being unpatentable under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

rwk

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